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EXAMINER	
ENTEZARI, MICHELLE M	
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2624	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/569,318	GOMILA ET AL.	
	Examiner	Art Unit	
	MICHELLE ENTEZARI	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 5 of remarks, filed November 14, 2008, with respect to the rejection(s) of claim(s) 6, 7, 10, and 11 under 35 USC 112 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn

2. Applicant's arguments, see pages 6-11 of remarks, filed November 14, 2008, with respect to the rejection(s) of claim(s) 1-5, 8-9, and 12 under Frank and May have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Garrido et al.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows (see also MPEP 2106):

> Nonfunctional descriptive material that does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. Sec. 101. Certain types of descriptive material, such as music, literature, art, photographs and mere arrangements or compilations of facts or data, without any functional interrelationship is not a process, machine, manufacture or composition of matter. USPTO personnel should be prudent in applying the foregoing guidance. Nonfunctional descriptive material may be claimed in combination with other functional descriptive multi-media

> material on a computer-readable medium to provide the necessary functional and structural interrelationship to satisfy the requirements of 35 U.S.C. Sec. 101. The presence of the claimed nonfunctional descriptive material is not necessarily determinative of nonstatutory subject matter. For example, a computer that recognizes a particular grouping of musical notes read from memory and upon recognizing that particular sequence, causes another defined series of notes to be played, defines a functional interrelationship among that data and the computing processes performed when utilizing that data, and as such is statutory because it implements a statutory process.

Claims 1-12 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent[1] and recent Federal Circuit decisions[2] indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example, the steps of transforming, analyzing and estimating should be tied to a particular apparatus to perform these functions.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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[1] *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

[2] *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1, 3, and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Garrido et al. (US 6728317 B1).

Regarding claims 1 and 12, Garrido et al. disclose a method comprising the steps of: transforming a set of film grain samples to the frequency domain (adaptive filtering eliminates patterns that are visually insignificant, [0147]; DCT transform, [0186]-[0195]; generate adaptive quantization thresholds, [0219]); storing each set of coefficients resulting from such transform (DCT coefficients, [0195]), the coefficients forming a pattern (patterns include film grain, [0147]; horizontal texture, [0196]); analyzing the pattern created by the transform coefficients (adaptive filtering eliminates patterns that are visually insignificant, [0147]); and estimating the cut frequencies of a 2D band-pass filter that can effectively simulate the pattern of transform coefficients by filtering random noise in a frequency domain (band pass filter eliminates spatial frequencies exceeding a target content detail level, adaptive filtering eliminates patterns that are visually insignificant, patterns include film grain, [0146] - [0147]).

Garrido et al. do not explicitly disclose "a method for automatically modeling film grain patterns", however because Garrido et al. disclose eliminating spatial frequencies exceeding automatically derived target content detail level, and that adaptive filtering eliminates patterns that are visually insignificant, wherein patterns include film grain ([0146] - [0147]), it would be obvious at the time of the invention to one of ordinary skill

in the art that a form of automatic modeling is taking place. Though Garrido et al. do not explicitly use the term “cut frequencies”, because the bandpass filter is eliminating frequencies outside of the target range, it would be obvious at the time of the invention to one of ordinary skill in the art that this indicates the cut frequencies of the filter. Also, regarding claim 12, though Garrido et al. do not explicitly disclose “receiving film grain samples”, as Garrido et al. disclose receiving base images (abstract), and images have film grain noise ([0054], [0131], [0147]), it would have been obvious at the time of the invention to one of ordinary skill in the art to interpret the input images as analogous to film grain samples.

Regarding claim 3, Garrido et al. disclose the method according to claim 1, and further disclose the film grain samples are processed in blocks of N.times.N pixels (figure 1b, parts 1115, 1135, 1165, 1175; [0058]).

6. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Garrido et al. (US 6728317 B1) as applied to claim 1, further in view of Visharam et al. (US 20040006575 A1).

Regarding claim 2, Garrido et al. disclose the method according to claim 1. Garrido et al. do not disclose the step of transmitting at least one cut frequency in a Supplemental Enhancement Information message.

Visharam et al. teach transmitting supplemental information in an MPEG environment with SEI messages ([0015]; [0047]; [0171] - [0179]).

The Vishram et al. reference has a valid date, as it claims priority back to 2002, and these applications contain the relevant information regarding SEI messages cited in the 2004 publication. It would have been obvious at the time of the invention to one of ordinary skill in the art to use SEI messages including the cut frequencies with the invention of Garrido et al., as SEI messages are well known in the art and are a convenient way to provide additional information about the media files.

7. **Claims 4 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Garrido et al. (US 6728317 B1) as applied to claim 3, further in view of Engeldrum et al. (US 2002/0003903 A1) further in view of Ohnishi et al. (US 6327391 B1).

Regarding claims 4 and 8 Garrido et al. disclose the method according to claim 3.

Regarding claim 4, Garrido et al. do not disclose the step of analyzing the pattern created by the transform coefficients further comprises the steps of: computing a mean block of NxN transform coefficients by averaging the transform coefficients from all the stored blocks; defining horizontal and vertical mean vectors of N components each by averaging the mean block of NxN coefficients along rows and columns, respectively, of

each transformed block; representing the horizontal and vertical mean vectors as separate curves; and establishing cut frequencies from mean vectors.

Engeldrum et al. teach computing a mean block of NxN transform coefficients by averaging the transform coefficients from all the stored blocks (*cosine transform is used to process 8x8 blocks, mean coefficient value found for each block, [0205]*); defining horizontal and vertical mean vectors of N components each by averaging the mean block of NxN coefficients along rows and columns, respectively, of each transformed block (*mean vector vm, [0161]*); representing the horizontal and vertical mean vectors as separate curves (*collection of I/O curves, [0160]; I/O curve can be written as the linear combination of the average vector and three basis vectors, [0162]*);

It would have been obvious at the time of the invention to combine the methods of Engelrum et al. with the method of Garrido et al., because this leads to a significant compaction of data needed to describe the I/O curves (*Engeldrum et al., [0163]).*

Garrido et al. and Engeldrum et al. do not disclose establishing cut frequencies from mean vectors.

Ohnishi et al. teach establishing cut frequencies from mean vectors (*cutoff frequency changed in accordance with motion vector, col. 20, lines 5-15, the motion vector is the*

mean value, col. 6, lines 55-60, vectors stored in horizontal and vertical directions, col. 9, lines 60-65).

It would have been obvious at the time of the invention to one skilled in the art to combine the mean vectors taught by Ohnishi et al. with the method of Garrido et al. and Engeldrum et al. because with the adaptable cutoff frequency, the block discontinuities are less prominent (*Ohnishi et al., col. 20, lines 30-50*).

8. **Claims 5 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Garrido et al. (US 6728317 B1) and Engeldrum et al. (US 2002/0003903 A1) and Ohnishi et al. (US 6327391 B1) as applied to claims 4 and 8 above, further in view of Ratakonda et al. (US 6285711 B1).

Garrido et al. and Engeldrum et al. and Ohnishi et al. disclose the method according to claims 4 and 8.

Garrido et al. and Engeldrum et al. and Ohnishi et al. do not disclose further comprising the step of low pass filtering at least one mean vector.

Ratakonda et al. teach the step of low pass filtering at least one mean vector (*interpolate the column and row average vectors, can use a low-pass filter to interpolate, col. 8, lines 1-10*).

It would have been obvious at the time of the invention to one skilled in the art to combine the low pass filtering taught by Ratakonda et al. with the method of Garrido et al. and Engeldrum et al. and Ohnishi et al., because the method of Ratakonda et al. improves the accuracy of motion estimation (*Ratakonda et al., col. 2, lines 60-65*).

9. **Claims 6, 7, 10, and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Garrido et al. (US 6728317 B1) and Engeldrum et al. (US 2002/0003903 A1) and Ohnishi et al. (US 6327391 B1) as applied to claims 4 and 8 above, further in view of Steinberg et al. (US 5216556 A).

Regarding claims 6, 7, 10, and 11, Garrido et al. and Engeldrum et al. and Ohnishi et al. disclose the method according to claims 4 and 8.

Garrido et al. and Engeldrum et al. and Ohnishi et al. do not disclose the at least one cut frequency is established from an intersection point in the curve representing the mean vector, and each of a low and a high cut frequency is established from a first and second intersection points in the curve representing the mean vector.

Steinberg et al. teach in FIG. 8, where the horizontal axis represents frequency and the vertical axis denotes magnitude, shows an example of the magnitude frequency response of FIR 310, and the magnitude frequency response of FIR 310 is given by line

318 approximating, for example in a least squares sense, an ideal low pass filter response depicted by line 322 with a desired cutoff frequency f_{co} given by the intersection of lines 314 and 316, as shown in FIG. 8. (col. 6, lines 55-68)

The concept of using an intersection of curves as the cutoff frequency is well known in the art. It would have been obvious at the time of the invention to one of ordinary skill in the art to have the low and a high cut frequency is established from a first and second intersection points in the curve representing the mean vector, because this is one of a limited number of ways to determine the cut frequency, and would have been obvious to try.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELLE ENTEZARI whose telephone number is (571)270-5084. The examiner can normally be reached on M-Th, 7:30am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571)272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 2624

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